

AS



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
 United States Patent and Trademark Office  
 Address: COMMISSIONER FOR PATENTS  
 P.O. Box 1450  
 Alexandria, Virginia 22313-1450  
 www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/988,139	11/19/2001	Minoru Takizawa	216234US0	8192
22850	7590	02/09/2004	EXAMINER	
OBLON, SPIVAK, MCCLELLAND, MAIER & NEUSTADT, P.C. 1940 DUKE STREET ALEXANDRIA, VA 22314			CHANEY, CAROL DIANE	
			ART UNIT	PAPER NUMBER
			1745	

DATE MAILED: 02/09/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b> 09/988,139	<b>Applicant(s)</b> TAKIZAWA ET AL. <span style="float: right;">eb</span>	
	<b>Examiner</b> Carol Chaney	<b>Art Unit</b> 1745	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 18 December 2003.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-31 is/are pending in the application.
- 4a) Of the above claim(s) 10-17 is/are withdrawn from consideration.
- 5) ☒ Claim(s) 25-31 is/are allowed.
- 6) ☒ Claim(s) 1-9 and 18-24 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \*    c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |   |   |
|---|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)                        | 4) <input type="checkbox"/> Interview Summary (PTO-413)                     |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)    | Paper No(s)/Mail Date. _____  |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date _____   | 6) <input type="checkbox"/> Other: _____                                    |

### ***Action Summary***

In the previous office action, mailed 03 October 2003, the pending claims are 1-17; claims 10-17 should be withdrawn from further consideration and claims 1-9 should have been rejected. The Office Action Summary statement in which claims 1-12 were rejected and 13-17 were withdrawn from consideration was an inadvertent error.

The rejection over Jannasch et al. is withdrawn. Claims 1-9 and 18-24 are rejected as being anticipated by Giles; claims 25-31 are allowed.

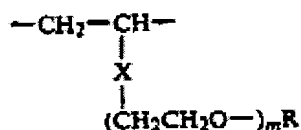
### ***Claim Rejections - 35 USC § 102***

The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

Claims 1-9 and 18-24 are rejected under 35 U.S.C. 102(b) as being anticipated by Giles et al., US Patent 5,196,484.

Giles et al. disclose A-B-A triblock copolymers where the A-block material is a polymer selected from polymers having a glass transition, softening or melting temperature above 70.degree. C., and in which the B-block material is an elastomeric or amorphous polymer which incorporates attached side chains which may be oxyalkane sequences containing 2 to 6 carbon atoms between neighboring oxygen atoms. (See column 1, line 66-column 2, line 12.) The side chains for the B-block materials contain linking groups 'X' which can be

Art Unit: 1745



ester linkages. (See column 20, lines 5-21.)

A preferred A-B-A copolymer is polystyrene-poly(cis-1,4-butadiene)-polystyrene ("PS-PBD-PS"). (Column 8, lines 34-42.) With regards to claim 5, the B-block polymer main chain may have a variety of structures including those derived from a cis-1,4-polybutadiene chain onto which polyoxyalkane sequences are grafted. (Column 6, lines 11-15.) Thus, Giles et al. disclose grafted copolymers. A preferred average molar mass for A-block polystyrene segments is about 10,000 to 40,000 and for B-block segments about 40,000 up to about 150,000, typically about 100,000. (Column 10, lines 42-49.)

With regards to claims 3 and 7, the ABA polymer disclosed by Giles et al. is blended with either polyethylene glycol dimethyl ether or polystyrene. (Column 17, Example 7.)

With regards to claims 4 and 8, the polymers disclosed by Giles are formed into films between 100 and 300 microns, or 0.1 to 0.3 mm thick. With regards to claim 9, electrochemical cells using these films are constructed. (Column 16, lines 17-26.)

It is noted that Giles et al. refer to their inventive material as a "solid electrolyte" rather than a "solidifying material". However, since the materials described by the prior art and the instant invention are essentially identical, the manner in which the materials are described is not considered relevant to patentability. The Court of Customs and

Art Unit: 1745

Patent Appeals has long recognized that an invention may be described in different ways and still be the same invention. See *Kennecott Corp. v. Kyocera International, Inc.* 5 USPQ2d 1194 (CFAC 12-22-87) and *In re Kirscher*, 134 USPQ 324 (CCPA 1962).

### ***Allowable Subject Matter***

Claims 25-31 are allowed.

The following is a statement of reasons for the indication of allowable subject matter: The nearest prior art of Jannasch et al. and Giles et al. suggests A-B-A block copolymers used as "solidifying materials" for battery electrolytes. However, neither Jannasch et al. nor Giles et. suggests that in each of the segments B, at least one of a carboxyl group, an ester group, a hydroxyl group, a sulfonic group, an amino group, a cyclic carbonate group and a polyoxyalkylene group is bonded via a -S- bond. The bonding in the prior art references is through -C- bonds, and there is no motivation in the prior art to substitute -S- bonds for -C- bonds.

### ***Response to Arguments***

Applicant's arguments filed 18 November 2003 have been fully considered but they are not persuasive. As noted by the applicants, a feature of Claims 1-9, as now amended, as well as of Claims 18-24, is that the functional groups attached to segments 'B' can no longer include polyoxyalkylene groups. The Jannasch et al. discloses only polyoxyalkylene groups attached to copolymer segments, and therefore

Art Unit: 1745

the rejection over Jannasch et al. is withdrawn. However, as noted above, Giles et al. disclose A-B-A copolymers in which the B-blocks include ester moieties as linking groups. Thus, the rejections of claims 1-9 over Giles et al. are maintained, and for similar reasons, claims 18-24 are rejected.

### ***Conclusion***

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).


A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Carol Chaney whose telephone number is (571) 272-1284. The examiner can normally be reached on Mon - Fri 8:00am-4:30pm.

Art Unit: 1745

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Patrick Ryan can be reached on 571-272-1292. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

  
Carol Chaney  
Primary Examiner  
Art Unit 1745

cc